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ABSTRACT

Inclusive education (i.e., the elimination of special education as a separate classroom in isolation from the mainstream of the education process) poses a significant challenge to educational leaders of the 21st century. Leaders of the next generation need to commit teachers to acquiring a repertoire of new teaching practices that weave technology into the curriculum--all within heterogeneous groupings of students. A prevalent issue that emerges for educational leaders in the use of instructional technology concerns access and equity. Cost benefit versus cost efficiency in improving educational outcomes is also a consideration for administrators. Educational leaders must prioritize computer acquisition, installation, and replacement as crucial to the success of an educational organization; they need to focus on the role of the computer in providing vocational skills and in easing the transition from school to work. The vision of inclusion is one in which students, both regular and those with special needs, interact in a technologically-supportive environment. The computer must be personified as a diplomat of public service--a non-threatening purveyor of knowledge that assists educational leaders of the future with the ultimate challenge: the delivery of educational services to academically, behaviorally and culturally diverse students. (AEF)

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Inclusion and Technology: A Marriage of Convenience for Educational Leaders

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Foreign countries have for years recognized the significance of alliances between nations through a prearranged betrothal. The result: a collective merging of assets serving to fortify the position of each to embark upon further vistas of achievement and to provide a combined force with which to reckon from an invading enemy, if threatened. The forging of an alliance between inclusion and technology represents such a union—a marriage of convenience for educational leaders.

The computer represents the ambassador of public relations—a virtual monolith, designed as a mechanism of cooperation between children with and without special needs. Inclusive education, the elimination of special education as a separate classroom in isolation from the mainstream of the education process, poses a significant challenge to educational leaders of the 21st century. A comprehensive system of education—the total integration of students with special needs in the regular classroom—transverses the mere embracing of the concept of inclusion.

Thinking Differently

Special education was developed over a century ago to meet the unique instructional needs of students considered to be exceptional or special. Since that time, essentially two systems of education have emerged- special and regular education.

A change of thinking in the belief that a dichotomy of practices is mandatory to address the learning needs of students has been slow and arduous. Teaching strategies and practices that enrich the learning environment are advantageous, not only to a few, such as, students with attention deficits or orthopedic impairments, but rather serve to positively impact the collective whole—the entire classroom of students.

Ideally, education has the potential to be the great equalizer. An environment that cultivates solidarity necessitates the incorporation of teaching methodologies in an integrated setting that bridge the regular special educational categories. If schools are to become the cornerstones of progress, then it is imperative for educational leaders to engage teachers in the continued improvement of professional skills regarding the incorporation of technology into the classroom.

Educational leaders must provide all students, including students with special needs, with access to the same opportunities for a quality education. The engagement of the teaching force in activities that promote the continuing acquisition of current knowledge applicable to the next millennium is crucial.

Serving as Catalysts for Change

Leaders of the next generation need to commit teachers to acquiring a repertoire of new teaching practices that weave technology into the curriculum—all within heterogeneous groupings of students. It will no longer suffice for leaders in educational environments of the 21st century to be "guardians of the status quo," knowledgeable of only the generic, traditional content and process of educational pedagogy and traditional leadership. Rather, the role of the educational leader as a catalyst for change is evolving with the same rapidity as the vision of the teacher as the facilitator of learning.

First and foremost, leaders need to connect diverse collections of students; instructional technology provides the foundation for such an amalgamation. Future leaders must foster the incorporation of technology into the inclusive classroom to maximize the learning process for all students. Administrators need to invest time and energy in activities that range from establishing fundraising partnerships with businesses for the purchase of computers, to encouraging parents to gain new computer skills, to assisting teachers in adapting performance standards in instructional technology.

Identifying Relevant Issues

A prevalent issue that emerges for educational leaders in the use of instructional technology concerns access and equity. Gilster (1997) emphasized that equity within the United States and global equity are of great concern. Although some wealthy suburban areas have high-tech environments, schools located in poverty areas and those

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located in other parts of the world are denied access to computers.

Cost benefit versus cost efficiency in improving educational outcomes is also a consideration for administrators. Some school budgets are delineated to allow for purchases of new computers and the associated technologies—Internet connections and multimedia capabilities. Yet, the fiscal resources necessary for supplying students with high-performance computing and communications technology varies (Coley et al., 1997).

Leaders in educational environments must be cautious not to envision the computer as a panacea for all educational woes for all populations-regular and special education alike. To perpetuate the perception that educational deficits are remedied and gaps in learning circumvented with nothing more than proximity to the computer is erroneous; no truth is less self evident. A gamma ray-like epiphany does not happen; students do not become transformed by some osmosmotic process that passes from the computer screen to the cerebrum of the student.

Increases in student achievement require the initiation and nurturing of systematic reform. Change requires participation in word and deed of all constituents of the educational process— students, teachers and administrators. Innovations need to embody the enhancement of the focus on professional development, pedagogy, assessment, curricula and especially leadership.

Seizing the Opportunity

The momentum, generated by the clarion call to action for educational reform, must be seized as an opportunity for educational leaders to promote an agenda for change—one that stresses unprecedented spending on computers and associated technologies. Educational leaders must prioritize computer acquisition, installation and replacement as crucial to the success of an educational organization.

Implementing change in educational organizations is particularly difficult and historically slow. Educational leaders must beware of modern Ludites i.e., individuals who abhor technology. One need not look further than the rationale for linear-row seating arrangements in classrooms to truly understand the inertia representative of schools. Beginning with the Industrial Revolution and continuing today, small aliquots of space in singular, designated patterns were designed to mimic the atmosphere of the factory and, most importantly, to prepare students for their jobs as future factory workers.

Many educational leaders are approaching the technology movement with evangelistic-like enthusiasm, proselytizing teachers, parents, school board members and communities into the flock of believers. In creating an environment for a change to a more technologically-focused delivery of educational services, educational leaders should exercise caution in avoiding fallacious thinking where technology is perceived as a "magic potion" in which one dose works well and several doses work even better. Unique applications of technology, implemented by technologically competent teachers, can serve to improve student achievement and prepare all students for employment in the technologically-focused, futuristic world of the next generation.

Educational leaders need to focus on the role of the computer in providing vocational skills and in easing the transition from school to work. Students with special needs are sometimes seen as non contributing members of our society unable to attain gainful employment. The computer helps all students assess their abilities and talents and establishes a match with potential opportunities.

Today's students are living in electronically-immersed realities in which technology can make learning easier and certainly more fun. School administrators need to: support initiatives that foster innovative uses of technology in the classroom; accept the onus of responsibility as the major change agent of schools; and, provide the resources for the acquisition of the new tools for learning.

Visualizing for Tomorrow

A mind set is entrenched: technology is beneficial to improving student outcomes. What is not addressed concerns a value-added dimension: technology is advantageous to students with special needs in a variety of ways, including higher academic performance and increased interaction with peers.

The vision of inclusion is one in which students, regular and those with special needs, interact in a technologically-supportive environment. Significant changes in instructional practices must occur if students with special needs are going to achieve in a regular classroom at levels equal to or higher than when they were in self-contained, special education classes.

Educational leaders must visualize instructional technology as a modern of communication with the potential to serve as a metaphorical olive branch for students with and those without special needs, and for teachers supportive of inclusion and those in favor of exclusion. Students designated as low, average, or high-achieving can benefit from the application of technology in the classroom.

A major critique of inclusion by veteran teachers concerns the perceived deleterious effect an inclusive setting will have on the learning process for regular education students in the traditional classroom. Minimization of negativity concerning the inclusive process stresses the education of pre-service and in-service teachers in strategies that include: the development of an expertise in the learning styles of students and the accompanying technology that promotes the uniqueness of the learning process for each student. Fostering a classroom climate that not only tolerates but appreciates individual difference is imperative.

The classroom of tomorrow will be vastly different from the classroom of the present. Efforts directed at conquering the challenges involved in integrating technology into the

curricula continue to divulge new avenues of learning worthy of exploration by educational leaders. According to (Bruce & Levin, in press) the range of learning experiences for students is dramatically increased and enhanced with interactive, multimedia technology in which text, voice, music, graphics, photos, animation and video provide for active, focused learning.

Innovative projects and resources using a variety of technologies from electronic networks, integrated media, and problem-solving applications support the development of higher-order thinking and provide excellent opportunities for teachers to gain new knowledge and skills. Such programs and projects include: The National Aeronautics and Space Administration On-line Resources for Educators, including The GLOBE Program-Global Learning Observations to Benefit The Environment, NASA Spacelink, NASA Teacher Resource Center Network and NASA's Central Operation of Resources for Educators(CORE).

Leaders of the 21st century must broker the relationship of inclusion and technology as a marriage of convenience. The computer must be personified as a diplomat of public service—a non-threatening purveyor of knowledge that assists educational leaders of the future with the ultimate challenge: the delivery of educational services to academically, behaviorally and culturally diverse students.

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